WHAT IS CLAIMED IS:

1. An operating method, for detecting and solving underflow and overflow by using oversampling, the method is suitable for a transmitter and a receiver to transmit data by using different clock frequencies, the receiver receives a plurality of received packages, each of the received packages includes a plurality of data, each of the data is sampled by a plurality of sampling phases, the sampling phase that is located in the front edge of each of the data is referred to as a leading edge sampling phase, the method comprises the steps of:

using the leading edge sampling phase of each of the received packages having the most frequency in the first synchronous period as an initial leading edge phase;

determining an underflow circulation center point and an overflow circulation center point;

processing an underflow operation and an overflow operation according to the underflow circulation center point and the overflow circulation center point;

throwing away an extra bit when processing the underflow operation; and

inserting a lost bit when processing the overflow operation.

2. The operating method of claim 1, wherein when each of the data is sampled, the data is sampled by using one of the sampling phases after the leading edge sampling phase that is corresponding to each of the data.

3. The operating method of claim 1, wherein when the sampling phases have n (n is a positive odd number) sampling phases, the phase shift of the leading edge sampling phase that is located in between the (n+1)/2th sampling phase and the ([(n+1)/2]+1th sampling phase is used as the underflow circulation center point and the overflow circulation center point.

4. The operating method of claim 1, wherein when the sampling phases have m (m is a positive even number) sampling phases, the leading edge sampling phase that is located in the [(m/2)+1]th sampling phase is used as the underflow circulation center point and the overflow circulation center point.

5. An operating method, for detecting and solving underflow and overflow by using oversampling, the method is suitable for a transmitter and a receiver to transmit data by using different clock frequencies, the receiver receives a plurality of received packages, each of the received packages includes a plurality of data, each of the data is sampled by a plurality of sampling phases, the sampling phase that is located in the front edge of each of the data is referred to as a leading edge sampling phase, the method comprises the steps of:

using the leading edge sampling phase of each of the received packages having the most frequency in the first synchronous period as an initial leading edge phase;

determining an underflow circulation center point and an overflow circulation center point;

processing an underflow operation and an overflow operation;

throwing away an extra bit when processing the underflow operation; and

inserting a lost bit when processing the overflow operation;

wherein when the sampling phases have n (n is a positive odd number) sampling phases, the phase shift of the leading edge sampling phase that is located in between the (n+1)/2th sampling phase and the ([(n+1)/2]+1th sampling phase is used as the underflow circulation center point and the overflow circulation center point, when the sampling phases have m (m is a positive even number) sampling phases, the leading edge sampling

phase that is located in the [(m/2)+1]th sampling phase is used as the underflow circulation center point and the overflow circulation center point.

6. The operating method of claim 5, wherein when each of the data is sampled, the data is sampled by using one of the sampling phases after the leading edge sampling phase that is corresponding to each of the data.

7. An operating method, for detecting and solving underflow by using oversampling, the method is suitable for a transmitter and a receiver to transmit data by using different clock frequencies, the receiver receives a plurality of received packages, each of the received packages includes a plurality of data, each of the data is sampled by a plurality of sampling phases, the sampling phase that is located in the front edge of each of the data is referred to as a leading edge sampling phase, the method comprises the steps of:

using the leading edge sampling phase of each of the received packages having the most frequency in the first synchronous period as an initial leading edge phase;

determining an underflow circulation center point;

processing an underflow operation according to the underflow circulation center point; and

throwing away an extra bit when processing the underflow operation.

8. The operating method of claim 7, wherein when each of the data is sampled, the data is sampled by using one of the sampling phases after the leading edge sampling phase that is corresponding to each of the data.

9. The operating method of claim 7, wherein when the sampling phases have n (n is a positive odd number) sampling phases, the phase shift of the leading edge sampling

phase that is located in between the (n+1)/2th sampling phase and the ([(n+1)/2]+1th sampling phase is used as the underflow circulation center point.

10. The operating method of claim 7, wherein when these sampling phases have m (m is a positive even number) sampling phases, the leading edge sampling phase that is located in the [(m/2)+1]th sampling phase is used as the underflow circulation center point.

11. An operating method, for detecting and solving underflow by using oversampling, the method is suitable for a transmitter and a receiver to transmit data by using different clock frequencies, the receiver receives a plurality of received packages, each of the received packages includes a plurality of data, each of the data is sampled by a plurality of sampling phases, the sampling phase that is located in the front edge of each of the data is referred to as a leading edge sampling phase, the method comprises the steps of:

using the leading edge sampling phase of each of the received packages having the most frequency in the first synchronous period as an initial leading edge phase;

determining an underflow circulation center point;

processing an underflow operation according to the underflow circulation center point; and

throwing away an extra bit when processing the underflow operation;

wherein when the sampling phases have n (n is a positive odd number) sampling phases, the phase shift of the leading edge sampling phase that is located in between the (n+1)/2th sampling phase and the ([(n+1)/2]+1th sampling phase is used as the underflow circulation center point, when the sampling phases have m (m is a positive even number)

sampling phases, the leading edge sampling phase that is located in the [(m/2)+1]th sampling phase is used as the underflow circulation center point.

12. The operating method of claim 11, wherein when each of the data is sampled, the data is sampled by using one of the sampling phases after the leading edge sampling phase that is corresponding to each of the data.

13. An operating method, for detecting and solving overflow by using oversampling, the method is suitable for a transmitter and a receiver to transmit data by using different clock frequencies, the receiver receives a plurality of received packages, each of the received packages includes a plurality of data, each of the data is sampled by a plurality of sampling phases, the sampling phase that is located in the front edge of each of the data is referred to as a leading edge sampling phase, the method comprises the steps of:

using the leading edge sampling phase of each of the received packages having the most frequency in the first synchronous period as an initial leading edge phase;

determining an overflow circulation center point;

processing an overflow operation according to the overflow circulation center point; and

inserting a lost bit when processing the overflow operation.

14. The operating method of claim 13, wherein when each of the data is sampled, the data is sampled by using one of the sampling phases after the leading edge sampling phase that is corresponding to each of the data.

15. The operating method of claim 13, wherein when the sampling phases have n (n is a positive odd number) sampling phases, the phase shift of the leading edge sampling

phase that is located in between the (n+1)/2th sampling phase and the ([(n+1)/2]+1th sampling phase is used as the overflow circulation center point.

16. The operating method of claim 13, wherein when the sampling phases have m (m is a positive even number) sampling phases, the leading edge sampling phase that is located in the [(m/2)+1]th sampling phase is used as the overflow circulation center point.

17. An operating method, for detecting and solving overflow by using oversampling, the method is suitable for a transmitter and a receiver to transmit data by using different clock frequencies, the receiver receives a plurality of received packages, each of the received packages includes a plurality of data, each of the data is sampled by a plurality of sampling phases, the sampling phase that is located in the front edge of each of the data is referred to as a leading edge sampling phase, the method comprises the steps of:

using the leading edge sampling phase of each of the received packages having the most frequency in the first synchronous period as an initial leading edge phase;

determining an overflow circulation center point;

processing an overflow operation according to the overflow circulation center point; and

inserting a lost bit when processing the overflow operation;

wherein when the sampling phases have n (n is a positive odd number) sampling phases, the phase shift of the leading edge sampling phase that is located in between the (n+1)/2th sampling phase and the ([(n+1)/2]+1th sampling phase is used as the overflow circulation center point, when these sampling phases have m (m is a positive even number) sampling phases, the leading edge sampling phase that is located in the [(m/2)+1]th sampling phase is used as the overflow circulation center point.

18. The operating method of claim 17, wherein when each of the data is sampled, the data is sampled by using one of the sampling phases after the leading edge sampling phase that is corresponding to each of the data.